

REMARKS

Claims 6-8 and 19 have been amended. Claims 6-8, 19-21, 23, 24, 26, 27, 30, and 32-35 are currently pending in the case. Further examination and reconsideration of the presently claimed application are respectfully requested.

Section 112 Rejection

Claims 6-11, 19-21, 23, and 24 were rejected under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter. In response thereto, claims 6, 7, and 19 have been amended, and claims 10 and 11 have been canceled. With respect to claims 6, 7, and 19, page 2 of the office action states that the phrase “substantially similar” in claims 6 and 19 is a relative term, which renders the claim indefinite. In response thereto, claim 6 has been amended to specify in part that the gate to substrate capacitance of the oxide-nitride dielectric is “substantially equal” to the gate to substrate capacitance of an oxide gate dielectric comprising a thickness less than approximately 20 angstroms. Claim 7 was similarly amended because it too contained the phrase “substantially similar.” Support for the amendments to claim 6 and claim 7 can be found on page 5, lines 17-19 of the specification. Claim 19 has also been amended to specify that when the semiconductor topography is transferred from the first to second chamber, it is exposed to a temperature “substantially equal” to the temperature it is exposed to in the first chamber. Support for the amendment to claim 19 can be found on page 5, lines 12 and 13.

While “substantially equal” is a relative term, it should be noted that “the fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 USC 112, second paragraph. *Seattle Box co. v. Industrial Crating & Packing, Inc.*, 221 USPQ 568 (Fed. Cir 1984). Further, the term “substantially equal” has been held to be definite because a person of ordinary skill in the art would know what is meant by the term. *Andrew Corp. v. Gabriel Electronics*, 6 USPQ2d 2010 (Fed. Cir. 1988). The amendments to claims 6 and 19 are believed to render claims 6 and 19 and claims dependent therefrom definite. Accordingly, removal of this rejection is respectfully requested.

Section 102 Rejection

Claims 6-8 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,066,519 to Gardner et al. (hereinafter “Gardner ‘519”). A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. Of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), MPEP 2131. Furthermore, anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, as arranged in the claim. *W.L. Gore & Assocs. V. Garlock*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. (1983). Using these standards, Applicant submits the cited art fails to disclose each and every element of the currently pending claims.

Gardner ‘519 does not describe a gate dielectric having a thickness that varies by less than 5% across the semiconductor topography. Amended claim 6 recites:

A semiconductor device comprising an oxide-nitride gate dielectric having substantially equal gate to substrate capacitance as an oxide gate dielectric comprising a thickness less than approximately 20 angstroms, wherein the oxide-nitride gate dielectric comprises: a silicon dioxide layer and a distinct silicon nitride layer; and a thickness that varies by less than approximately 5% across the semiconductor topography.

Support for the limitation of claim 6 may be found, for example, on page 16, lines 14-15 of the specification. Gardner ‘519 discloses a semiconductor device comprising an oxide layer and a nitride layer gate dielectric having substantially similar gate to substrate capacitance as an oxide gate dielectric comprising thickness 5-10 Angstrom wherein the oxide-nitride gate dielectric comprises a silicon dioxide layer and a distinct silicon nitride layer. However, Gardner ‘519 does not describe an oxide-nitride gate dielectric having a thickness that varies by less than approximately 5% across the semiconductor topography.

For the reasons set forth above, Applicants believe claim 6 and claims dependent therefrom are not anticipated by Gardner ‘519. Accordingly, removal of this rejection is respectfully requested.

Section 103 Rejections

Claims 12, 15, 17, and 31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,245,652 to Gardner et al. (hereinafter “Gardner ‘652”) in view of U.S. Patent Application Publication No. US 2002/0142500 by Foglietti (hereinafter “Foglietti”). Claim 18 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Gardner ‘652 in view of Foglietti in further view of U.S. Patent No. 6,077,791 to DeTar (hereinafter “DeTar”). Claims 26, 27, 30, 33, and 35 were rejected over Gardner ‘652 in view of DeTar. Claims 32 and 34 were rejected over Gardner ‘652 in view of DeTar further in view of Foglietti. To establish a *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (C.C.P.A. 1974), MPEP 2143.03. Obviousness cannot be established by combining or modifying the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion or incentive to do so. *In re Bond*, 910 F. 2d 81, 834, 15 USPQ2d 1566, 1568 (Fed. Cir. 1990). Claims 12, 15, 17, 18, and 31 have been canceled rendering rejection thereto moot. In addition, the cited art does not teach or suggest, and cannot be combined or modified to teach or suggest, all limitations of the remaining pending claims, some distinctive limitations of which are set forth in more detail below.

None of the cited art teaches or suggests the use of an ozonated deuterium oxide.

Claim 26. Claim 26 recites:

A method for processing a semiconductor topography, comprising: growing an oxide film upon the semiconductor topography in the presence of an ozonated substance comprising ozonated deuterium oxide; and depositing a silicon nitride film upon and in contact with the oxide film.

As noted on page 6 of the Office Action, “Gardner et al. fail to disclose the required ozonated substance comprising deuterium oxide.” However, applicant does not agree with the assertion that “DeTar discloses a method of forming a passivation layer using deuterium containing reaction gases where in column 2, lines 61-63, column 3 lines 50-67 and in claim 1, the required deuterium oxide substance is disclosed.” DeTar, in column 2, lines 61-63, does disclose Ozone as an oxygen source. However, Applicant notes that in column 3, lines 50-76, DeTar discloses the use

of several deuterium gases, none of which are deuterium oxide. Specifically, DeTar discloses “DH, molecular deuterium (D₂), forming gas including DH or D₂ and an inert gas, or the like.” Further, claim 1 of DeTar includes (1) a sintering gas that “has a first deuterated gas concentration”, (2) a first gas source to be introduced into a second reactor having a second deuterated gas concentration, and (3) a second gas source to be introduced into the second reactor “selected from a group consisting of oxygen, ozone, nitrous oxide, and a nitrogen source gas.” Again, Applicant notes that deuterium oxide is not disclosed by any of the cited text. Thus, no combination of the cited art can teach the limitations of claim 26.

For at least the reasons stated above, Applicants believe claim 26 and claims dependent therefrom are patentably distinct over the cited art. Accordingly, removal of this rejection is respectfully requested.

CONCLUSION

This response constitutes a complete response to all of the issues raised in the Office Action mailed March 13, 2007. In view of the amendments and remarks herein, Applicant asserts that pending claims 6-8, 19-21, 23, 24, 26, 27, 30, and 32-35 are in condition for allowance. If the Examiner has any questions, comments, or suggestions, the undersigned earnestly requests a telephone conference.

No fees are required for filing these amendments; however, the Commissioner is authorized to charge any additional fees, which may be required, or credit any overpayment, to Daffer McDaniel LLP Deposit Account No. 50-3268.

Respectfully submitted,

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